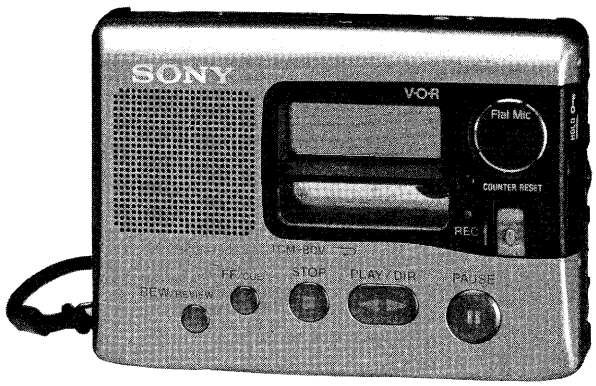
TCM-80V

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Tourist Model



Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MT-80-60

SPECIFICATIONS

Recording system
2-track 1 channel monaural

Frequency range
150 – 8,000 Hz

Speaker
Approx. 3.6 cm (1⅞ in.) dia.

Power output
70 mW (at 10 % harmonic distortion)

Input
Microphone input jack (minijack) sensitivity 0.3 mV for 3 kilohms or lower impedance microphone

Output
Earphone jack (minijack) for 8 – 300 ohms earphone

Variable range of the tape speed
From +20% to –10%

Power requirements
- Two size AAA (R03) batteries (not supplied): 1.5V DC
- Two NC-6WM rechageable batteries (1.2 V) (not supplied)

DC IN 1.5 V jack accepts:
- Sony AC-E15HG AC power adaptor (not supplied) suitable in the country where the unit is to be used.
- Sony DCC-E115L or DCC-E215HG car battery cord (not supplied) for use on 12 V car battery.

Dimensions (w/h/d) (incl. projecting parts and controls)
Approx. 110.9 × 28.6 × 77.2 mm (4⅜ × 1⅛ × 3⅛ in.)

Mass (incl. batteries)
Approx. 220 g (7.8 oz.)

Supplied accessories
Carrying case (1)
Sony alkaline batteries LR03 (SG) (2) (Sony world model only)
Microphone (1) (Sony world model only)
Earphones (1) (Sony world model only)
Ear adaptors (2) (Sony world model only)

Design and specifications are subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents.

CASSETTE CORDER

SONY®

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Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ℃ during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
SERVICING NOTE

Photo sensor H701 mounted on the main board is used to detect rotation of the reels. Because it is mounted on the main board, when the main board is being removed, rotation of the reels cannot be detected and the auto-off/ tape-end detector circuit does not operate correctly.
Switch S701 (for N/R and FF/REW) is also mounted on the main board. Therefore, without the main board, the head cannot be placed in playback position, and power cannot be supplied to the circuitry of the playback system.
When the main board is being removed, follow the procedures below, in order to check operation of the mechanisms of the tape deck and to check voltages supplied to each circuit.

NOTE:

Do not change the setting position of switch S701 when removing the main board. If it has been changed accidentally, or if the desired mode cannot be set with the switch, adjust the setting again after the main board is installed.

PLAY mode

(1) With a cassette tape loaded, press the "PLAY/DIR" button. (Confirm that the set-up of mechanical deck is finished.)
(2) Short the service tap TAP701 to take out the tape (see figure below). At this time, the motor is in the stop status.
(3) Press the "PLAY/DIR" button, thus the setting is over.
(4) Remove the main board.

FF mode

(1) With a cassette tape loaded, press the "FF/CUE" button. (Confirm that the set-up of mechanical deck is finished.)
(2) Short the service tap TAP701 to take out the tape (see figure below). At this time, the motor is in the stop status.
(3) Press the "FF/CUE" button, thus the setting is over.
(4) Remove the main board.

REW mode

(1) With a cassette tape loaded, press the "REW/ REVIEW" button. (Confirm that the set-up of mechanical deck is finished.)
(2) Short the service tap TAP701 to take out the tape (see figure below). At this time, the motor is in the stop status.
(3) Press the "REW/REVIEW" button, thus the setting is over.
(4) Remove the main board.

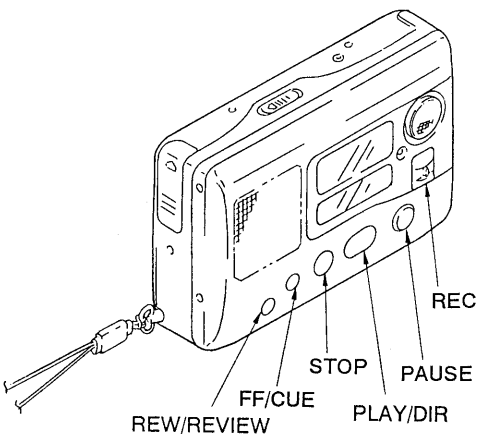
REC mode

(1) With a cassette tape loaded, press the "REC" button. (Confirm that the set-up of mechanical deck is finished.)
(2) Short the service tap TAP701 to take out the tape (see figure below). At this time, the motor is in the stop status.
(3) Press the "REC" button, thus the setting is over.
(4) Remove the main board.

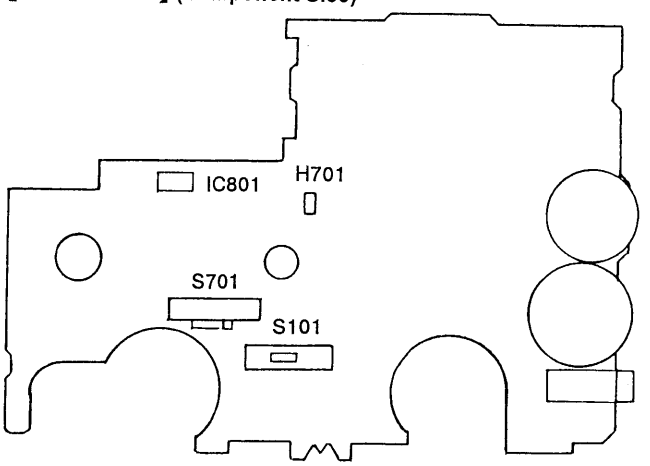
Note: After work is over,

(1) Mount the main board, and press the "STOP" button.
(2) Open the service tap TAP701.

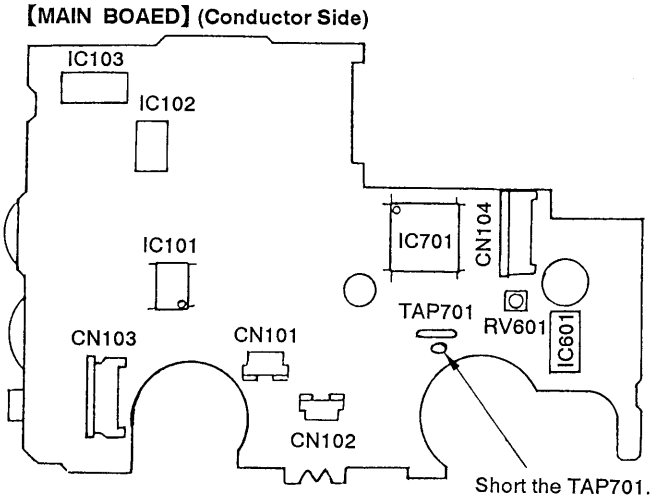
Front Cabinet



【MAIN BOARD】 (Component Sice)

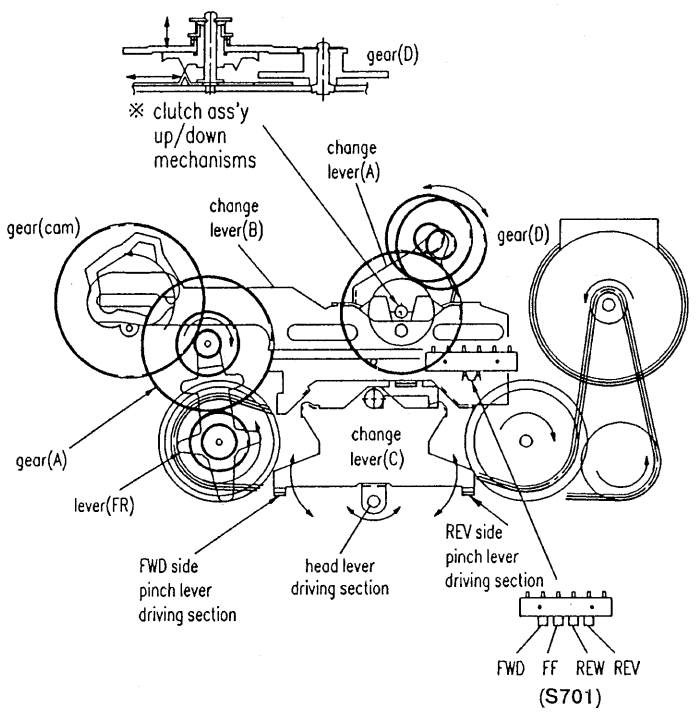


【MAIN BOAED】 (Conductor Side)



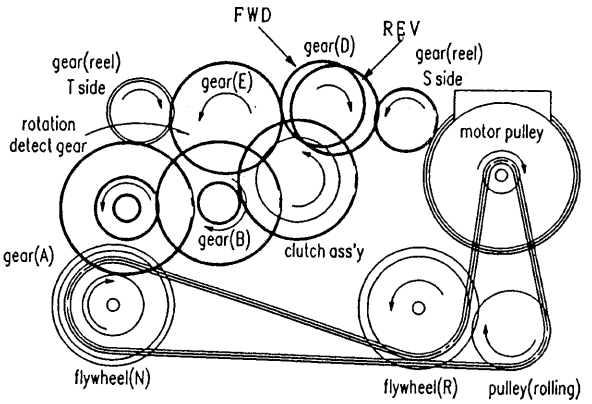
Function of the lever and rotating mechanisms for mode selection

- Mode selection starts when the motor rotates reversely.
- Change lever (B) moves to the left or right when driven with the gear (cam).
- The switch set position of switch S701 (4-position switch) is determined in accordance with the position of Change lever (B). When the switch set position is set appropriately, the motor rotates normally and the tape starts moving.

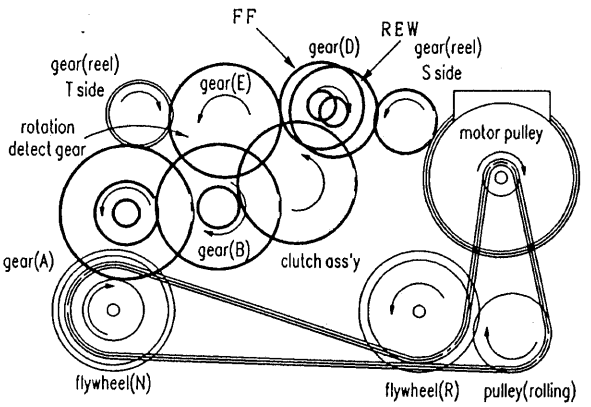


- Lever (FR) is driven with gear (A) by friction, and it swings to the left or right depending on the rotating direction of the motor.
- Selector levers (A) and (C) also swing to the left or right in accordance with the movement of Change lever (B), and the clutch assembly moves upward or downward accordingly.
- The pinch roller is activated and the head is placed in playback position with selector lever (C).
- When the mode is switched from one mode to another, the pinch roller is activated while the motor is rotating reversely (for a short period of time), causing a little slackness in the tape transport.

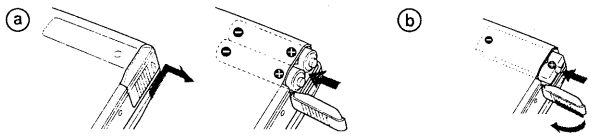
1. Rotating Mechanisms in PLAY Mode



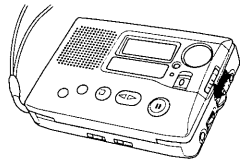
2. Rotating Mechanisms in FF, REW Mode



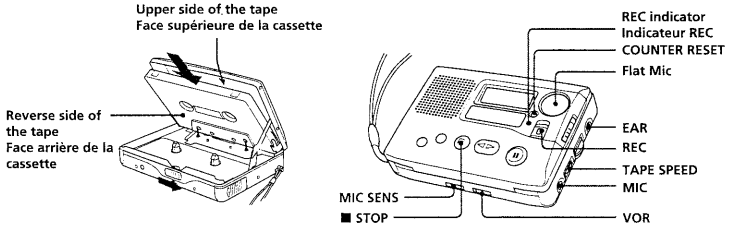
A



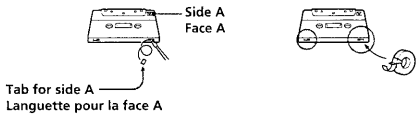
B



C



D



Welcome!

Thank you for purchasing the Sony TCM-80V Cassette-Corder. Some features are:

- Built-in microphone — You can make recording without using an external microphone.
- Auto-reverse recording/playback
- You can adjust the playback tape speed.
- VOR (Voice Operated Recording) system that starts and stops recording automatically in response to the sound, to save tapes and batteries.

▶*Getting Started*

Preparing a Power Source

Choose one of the three power sources below; dry batteries, rechargeable battery, and house current.

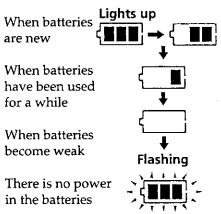
Dry Batteries (see Fig. A-ⓐ)

1 Open the battery compartment lid.

2 Insert two size AAA (R03) dry batteries (supplied with the Sony world model only).

When to replace the batteries

Replace the batteries with new ones when the battery indicator flashes. The battery indicator in the display window changes as follows:


When batteries are new
Lights up
When batteries have been used for a while
When batteries become weak
Flashing
There is no power in the batteries

Battery life (Approx. hours)

	Playback	Recording
Sony alkaline LR03(SG)	6.5	5
Sony R03(SB)	2	1.5

Notes

- Do not charge a dry battery.
- Do not use a new battery with an old one.
- Do not use different types of batteries.
- When you do not use the unit for a long time, remove the batteries to avoid any damage caused by battery leakage and subsequent corrosion.
- Dry batteries will not be expended when another power source is connected.

Rechargeable Battery (see Fig. A-ⓑ)

Before using the rechargeable Ni-Cd battery NC-6WM or Ni-MH rechargeable battery NH-9WM (not supplied), charge it first and then insert it into the battery compartment.

Battery life (Approx.hours) (Fully charged)

	Playback	Recording
Sony recharge-able battery (NC-6WM)	2.5	2.5
Sony recharge-able battery (NH-9WM)	4.5	4

House Current

Connect the AC power adaptor (AC-E15HG, not supplied) to DC IN 1.5 V and to the wall outlet. Do not use any other AC power adaptor.

Releasing HOLD (see Fig. B)

The HOLD function locks the unit to prevent it from operating when you accidentally press a button. If the unit is locked, unlock it before operating.

1 Slide HOLD in the reverse direction of the arrow so that the ⊶ indicator disappears from the display window.

To lock the unit

Slide HOLD in the direction of the arrow so that the ⊶ indicator appears in the display window.

▶*Operating the Unit*

Recording (see Fig. C)

You can record right away with the built-in microphone. Make sure nothing is connected to the MIC jack.

1 Press COUNTER RESET to reset the tape counter.

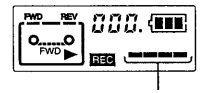
2 Insert a normal (TYPE I) tape with the side to start recording facing the cassette holder.

3 Set VOR to:
ON to start and pause recording automatically to the sound.
OFF to start and stop recording manually.

Note

- When the sound to be recorded is not loud enough, set the VOR switch to OFF, or the unit may not start recording.

4 Set MIC SENS to select the sentitivity of the microphone to:
H (high) to record at meetings or in a quiet and/or spacious place.
L (low) to record for dictation or in a noisy place.
You can see the sound level in the display window



Changes depending on the sound level

5 While pressing the center of the REC button, slide the REC button up.
Recording starts.
While the tape runs, the REC indicator lights and REC appears in the display window.

If you start recording from the upper side (FWD ► appears in the display window), recording automatically goes on to the reverse side (◄ REV appears in the display window) and the unit turns off automatically.

To	Press or slide
Stop recording	■ STOP
Pause recording	❚❚ PAUSE To release pause recording, press ❚❚ PAUSE.
Start recording during playback	Slide REC in the direction of the arrow during playback.
Review the portion just recorded	REW/REVIEW during recording. Release the button at the point to start playback.

To monitor the sound

Connect the earphone(s) (supplied with the Sony world model only) firmly to the EAR jack.

Notes

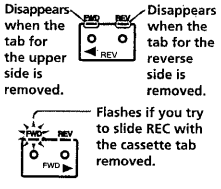
- Do not use a CrO_2 (TYPE II) or metal (TYPE IV) tape, otherwise the sound may be distorted when you play back the tape, or the previous recording may not be erased completely.
- The TAPE SPEED switch works in the playback mode only. Recording will be made independent of this control.
- If you open the lid during stop, the recording always starts from the upper side (FWD ► appears in the display window).

Notes on VOR (Voice Operated Recording)

- The VOR system depends on the environmental conditions. If you cannot get the desired results, set VOR to OFF.

To prevent a tape from being accidentlly recorded over (see Fig. D)

Break out and remove the cassette tabs. To reuse the tape for recording, cover the tab hole with adhesive tape.
When the cassette tab is removed, the bar in the display window disappears.


Disappears when the tab for the upper side is removed.
FWD
REV
REV
Disappears when the tab for the reverse side is removed.
Flashes if you try to slide REC with the cassette tab removed.
FWD
REV
FWD

To select the side to be recorded

To record on both sides continuously: Start recording on the upper side (FWD ► appears in the display window). If ◄ REV is displayed, press ■ STOP for more than 2 seconds. When recording ends on the upper side, it will automatically continue on the reverse side.
To record on one side only: Start recording on the reverse side (◄ REV appears in the display window). If FWD ► is displayed, press ■ STOP for more than 2 seconds. When recording ends on the reverse side, it will automatically stop.

To check the direction of the tape in the display window

FWD ► appears when recording on the upper side.
◄ REV appears when recording on the reverse side.

Recording from Various Sound Sources

Recording with an External Microphone

Connect a microphone to the MIC jack. Use a microphone of low impedance (less than 3 kilohms) such as ECM-T10 (not supplied). When using a plug-in-power system microphone, the power to the microphone is supplied from this unit.

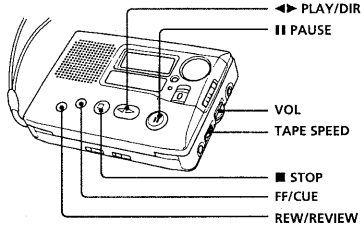
Note

- When recording with an external microphone, the VOR system may not work properly because of the difference in sensitivity.
- When using an external microphone, use a monaural type microphone. If a stereo microphone is connected, this unit may not operate properly.When the monaural microphone is equipped with a 3-polarity mini plug, use the Plug Adaptor PC-236MS to convert to 2 polarity.

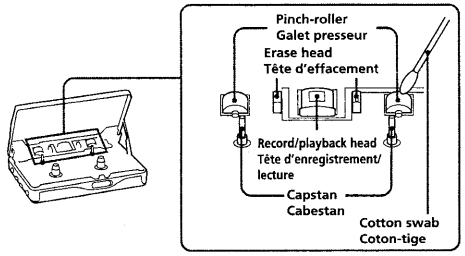
Recording from Another Equipment

Connect another equipment to the MIC jack using the RK-G64HG connecting cord (not supplied).

E



F



Playing a Tape (see Fig. E)

1 Insert a cassette with the side to start playing facing the cassette holder.

2 Adjust the tape playback speed.
Set TAPE SPEED to:
S (slow) to play back a tape slower.
Center position to play back a tape at normal speed.
F (fast) to play back a tape faster.

3 Press ◄► PLAY/DIR then adjust the volume.

If the playback starts from the upper side (FWD ► appears in the display window), playback goes on to the reverse side (◄ REV appears in the display window) and the unit turns off automatically.

To	Press
Play the other side	◄► PLAY/DIR during playback
Change the direction of playback during stop	■ STOP for more than 2 seconds
Stop playback	■ STOP
Pause playback	II PAUSE To release pause playback, press II PAUSE or ◄► PLAY/DIR.
Fast forward	FF/CUE during stop
Rewind	REW/ REVIEW during stop
Fast forward while listening to the sound (CUE)	FF/CUE during Playback
Rewind while listening to the sound (REVIEW)	REW/ REVIEW during playback
Play the same side from the beginning	◄► PLAY/DIR while pressing REW/ REVIEW
Play the other side from the beginning	◄► PLAY/DIR while pressing FF/ CUE

Note

- If you open the lid during stop, the playback always starts from the upper side (FWD ► appears in the display window).

Recording with the Remote Control Microphone

Connect the remote control microphone (supplied with the Sony world model only) to the MIC jack. The power to the microphone is supplied from this unit.

To pause playback/recording with the remote control microphone

Slide PAUSE → on the remote control microphone in the direction of the arrow. To release, slide it back to the place.

Note

- When operating with the remote control mirophone, you will not be able to operate the II PAUSE button on the main unit.

► *Additional Information*

Precautions

On power

- Operate the unit only on 1.5V DC. For AC operation, use the AC power adaptor recommended for the unit. Do not use any other type. For battery operation, use two size AAA (R03) batteries.
- The nameplate indicating operating voltage, etc., is located on the bottom of the unit.

On the unit

- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust or mechanical shock.
- Should any solid object or liquid fall into the unit, remove the batteries or disconnect the AC power adaptor, and have the unit checked by qualified personnel before operating it any further.
- Keep personal credit cards using magnetic coding or spring-wound watches etc. away from the unit to prevent possible damage from the magnet used for the speaker.

On tapes longer than 90 minutes

We do not recommend the use of tapes longer than 90 minutes except for a long continuous recording or playback. They are very thin and tend to be stretched easily.

On rechargeable battery

Certain countries may regulate disposal of the battery used to power this product.
Please consult with your local authority.

For the customers in the USA and Canada

RECYCLING NICKEL-CADMIUM BATTERIES

NICKEL-CADMIUM BATTERY. MUST BE DISPOSED OF PROPERLY.

Ni-Cd

Nickel-Cadmium batteries are recyclable. You can help preserve our environment by returning your unwanted batteries to your nearest Sony Service Center or Factory Service Center for collection, recycling or proper disposal.
Note: In some areas the disposal of nickel-cadmium batteries in household or business trash may be prohbited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only)
For the Factory Service Center nearest you call 416-499-SONY (Canada only)

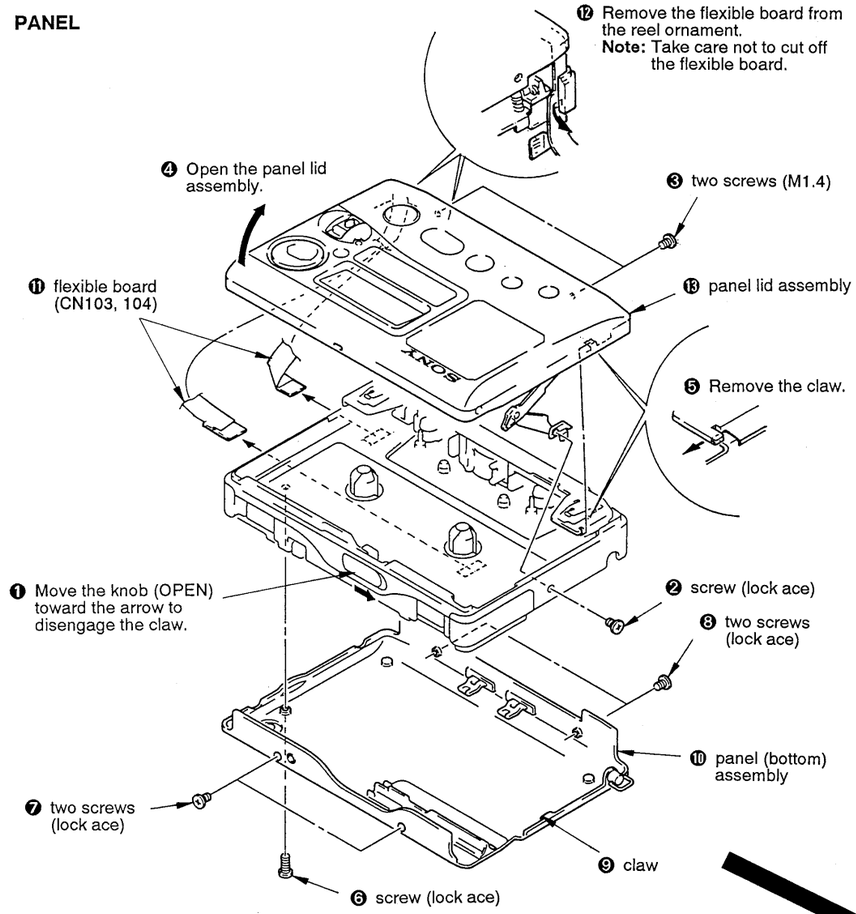
Caution: Do not handle damaged or leaking nickel-cadmium batteries.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

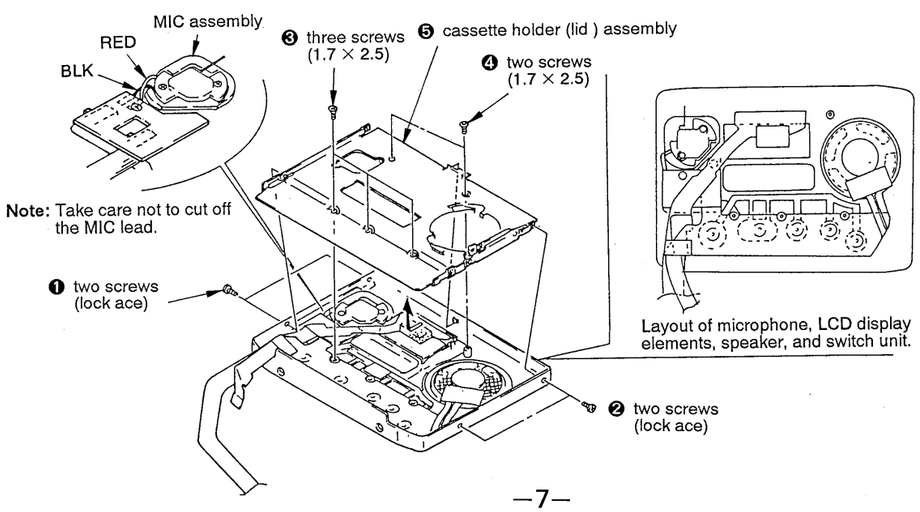
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

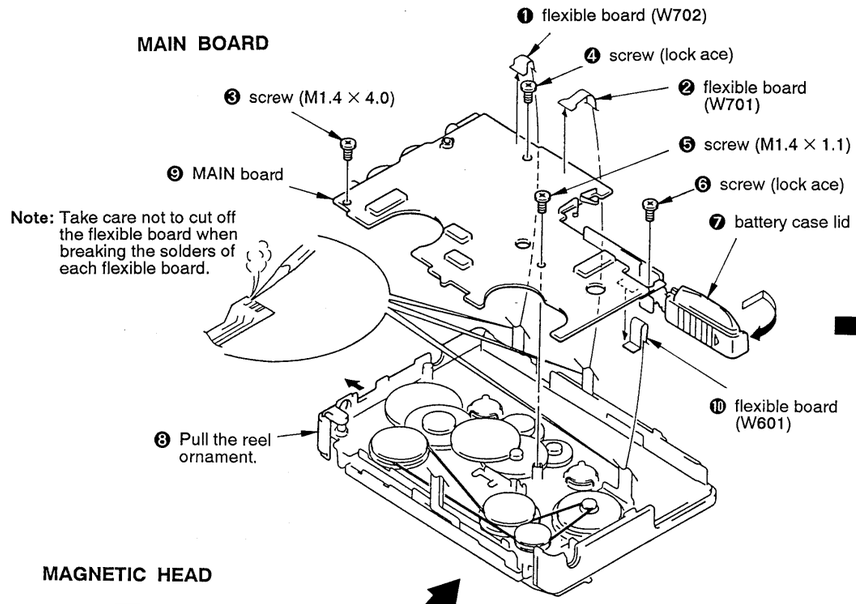
PANEL


⓬ Remove the flexible board from the reel ornament.
Note: Take care not to cut off the flexible board.
❹ Open the panel lid assembly.
❸ two screws (M1.4)
⓫ flexible board (CN103, 104)
⓭ panel lid assembly
❺ Remove the claw.
❶ Move the knob (OPEN) toward the arrow to disengage the claw.
❷ screw (lock ace)
❽ two screws (lock ace)
❿ panel (bottom) assembly
❼ two screws (lock ace)
❾ claw
❻ screw (lock ace)

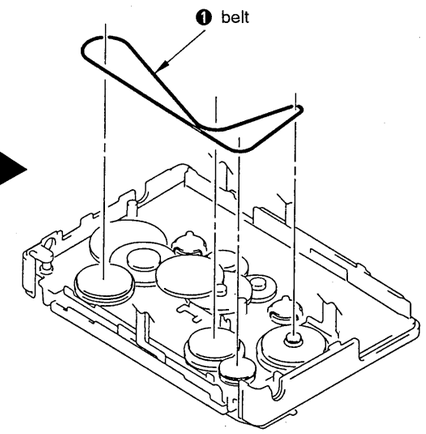
PANEL LID ASSEMBLY


MIC assembly
RED
BLK
❸ three screws (1.7 × 2.5)
❺ cassette holder (lid) assembly
❹ two screws (1.7 × 2.5)
Note: Take care not to cut off the MIC lead.
❶ two screws (lock ace)
Layout of microphone, LCD display elements, speaker, and switch unit.
❷ two screws (lock ace)

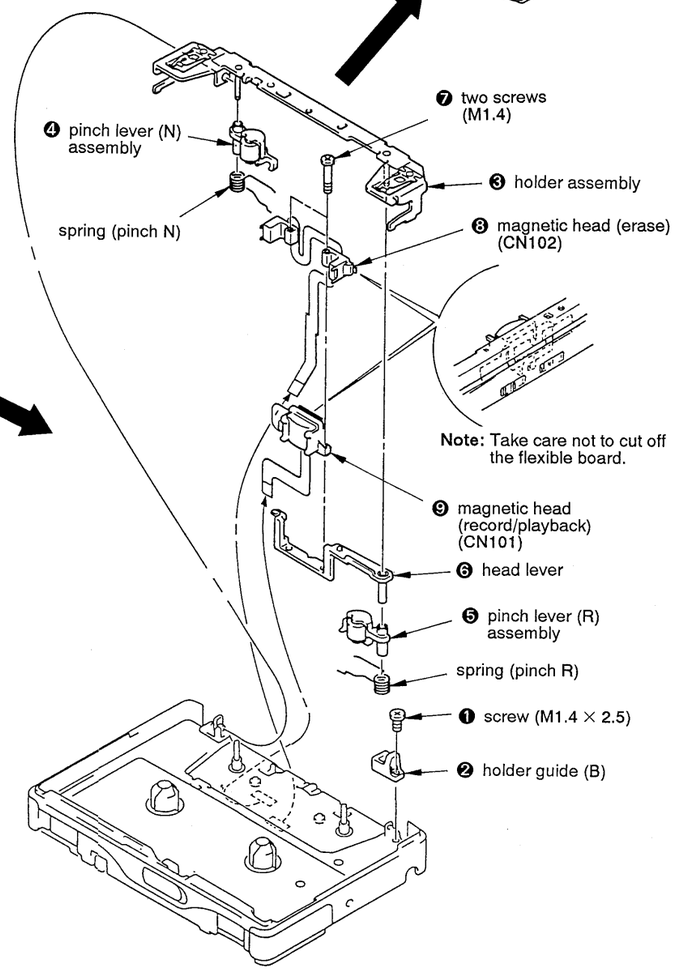
MAIN BOARD


❶ flexible board (W702)
❹ screw (lock ace)
❸ screw (M1.4 × 4.0)
❷ flexible board (W701)
❺ screw (M1.4 × 1.1)
❾ MAIN board
❻ screw (lock ace)
Note: Take care not to cut off the flexible board when breaking the solders of each flexible board.
❼ battery case lid
❿ flexible board (W601)
❽ Pull the reel ornament.

BELT

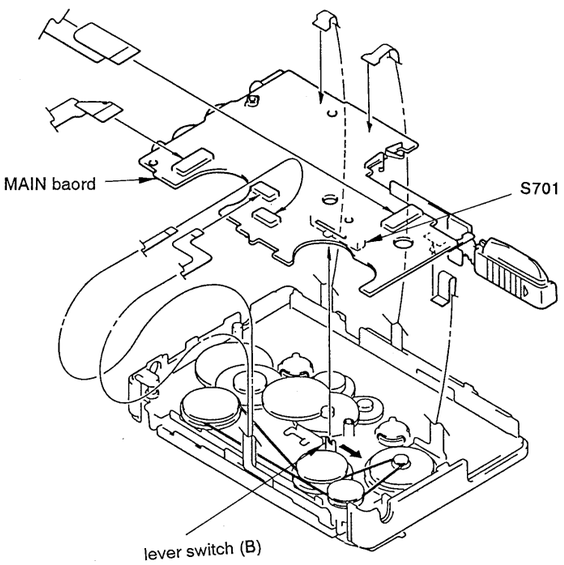


MAGNETIC HEAD


❼ two screws (M1.4)
❹ pinch lever (N) assembly
❸ holder assembly
spring (pinch N)
❽ magnetic head (erase) (CN102)
Note: Take care not to cut off the flexible board.
❾ magnetic head (record/playback) (CN101)
❻ head lever
❺ pinch lever (R) assembly
spring (pinch R)
❶ screw (M1.4 × 2.5)
❷ holder guide (B)

INSTALLATION MAIN BOARD

On installation MAIN board, adjust to the S701 and lever switch (B).



SECTION 4
MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber belts
   capstan — idlers
2. Demagnetize the record/playback head with a head demagentizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage (1.3 V) unless otherwise noted.

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	22 – 45 g•cm (0.31 – 0.62 oz•inch)
FWD Back Tension		1.0 – 3.5 g•cm (0.014 – 0.048 oz•inch)
REV	CQ-102RC	22 – 45 g•cm (0.31 – 0.62 oz•inch)
REV Back Tension		1.0 – 3.5 g•cm (0.014 – 0.048 oz•inch)
FF	CQ-201B	more than 60 g•cm (more than 0.84 oz•inch)
REW		

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 35 g (more than 0.48 oz•inch)
REV	CQ-403R	

SECTION 5
ELECTRICAL ADJUSTMENT

PRECAUTION

1. Perform adjustment under the following condition, unless otherwise specified.
   - Positions of switches and control knobs
     VOLUME knob ····· maximum
     MIC SENS switch ····· HIGH
     SPEED CONTROL knob ····· mechanical center
     VOR switch ····· OFF

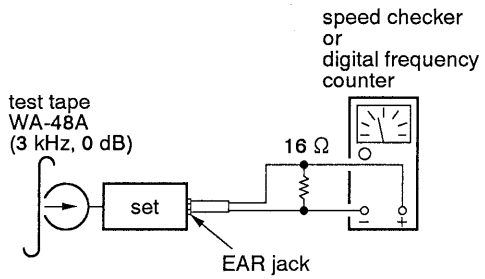
• Test tape

Type	signal	Used for
WS-48A	3 kHz, 0 dB	tape speed adjustment

Tape Speed Adjustment

Procedure:

Mode: FWD playback

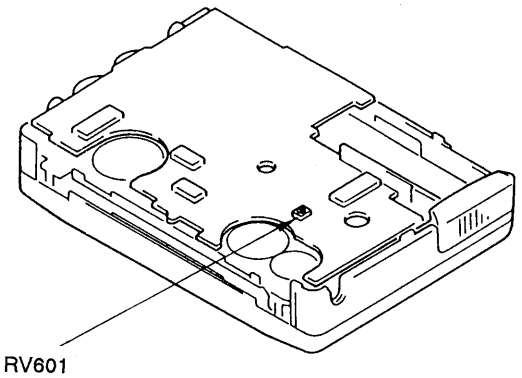


Adjustment Value:

Speed checker	Digital frequency counter
3,000 Hz ± 1%	2,970 – 3,030 Hz

Adjust the RV601 so that a difference in frequency at the start of tape winding and at the end of winding is within 1% (30 Hz) respectively.
After adjustment, select the REV PLAY mode, and confirm that the characteristics satisfy the standard.

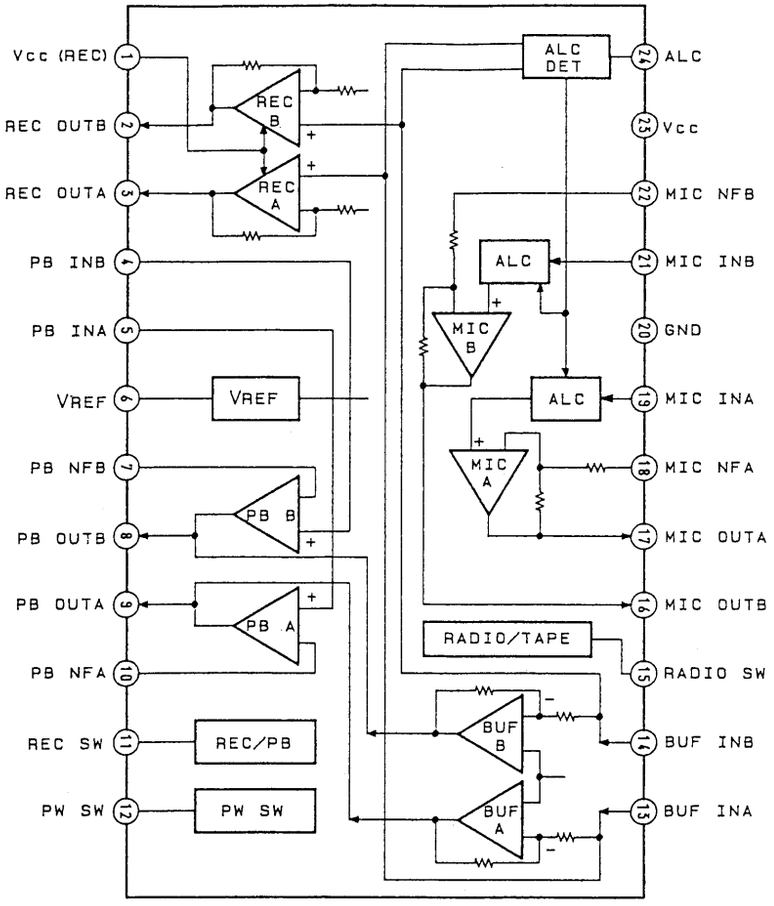
Adjustment Location: MAIN BOARD



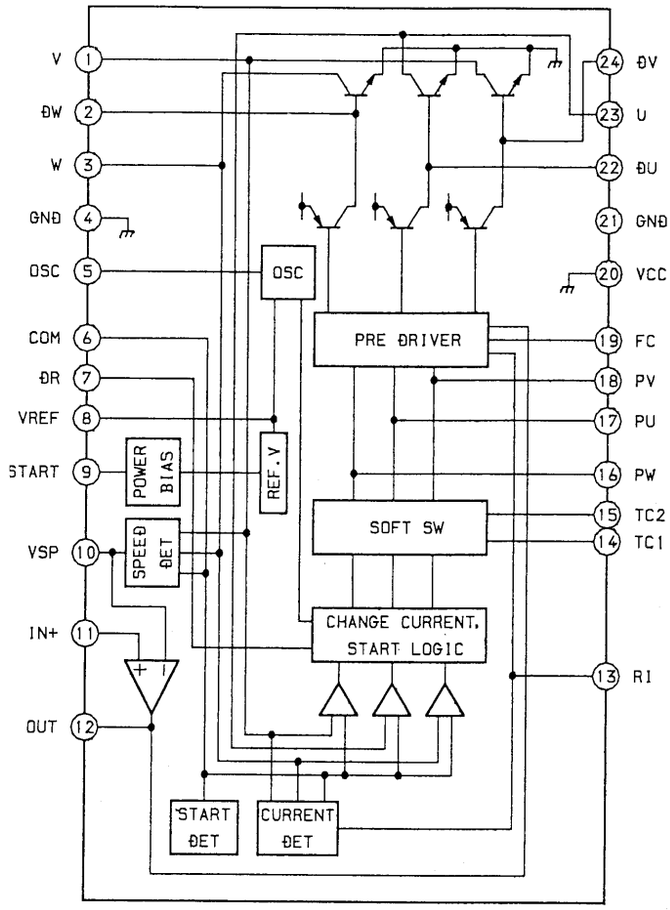
SECTION 6
DIAGRAMS

- **IC Block Diagrams**

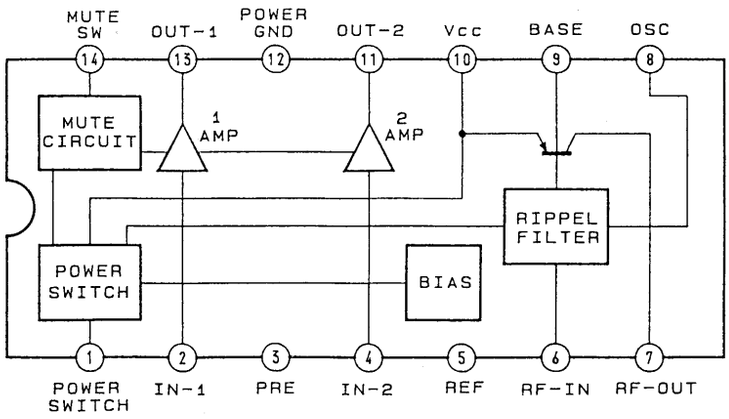
IC101 TA8155FN



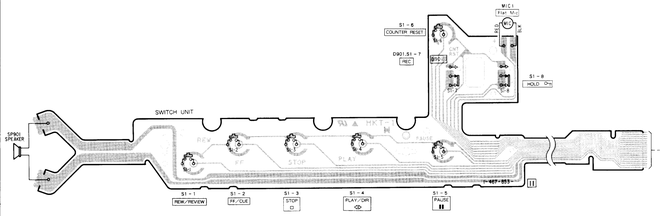
IC601 LB1674V



IC102 LA4538M



6-1. PRINTED WIRING BOARDS



Note:
- ○——○ : parts extracted from the component side.
- △ : internal component.
- ▨ : Pattern from the side which enables seeing.

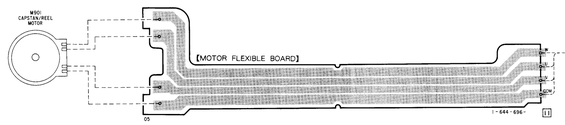
(The other layers' patterns are not indicated.)

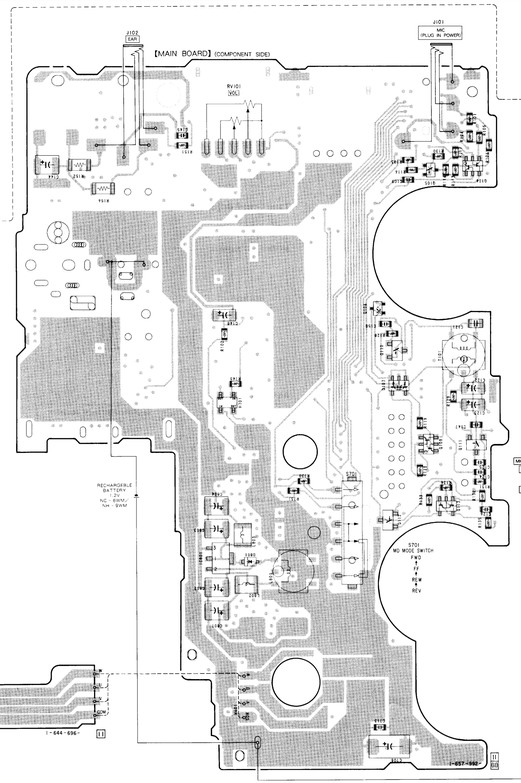
Caution:

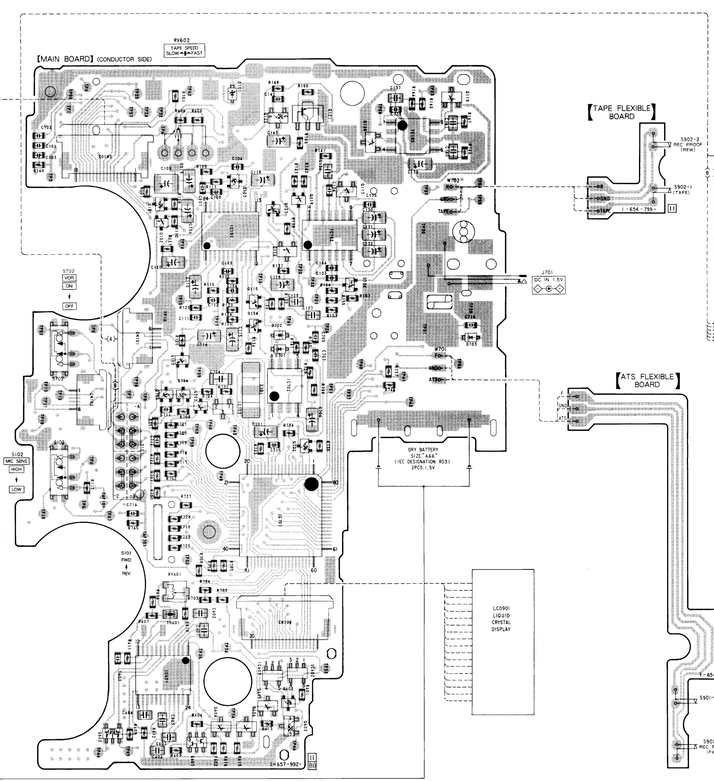
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

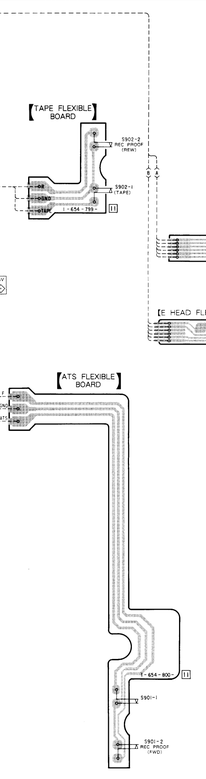
• Semiconductor Location

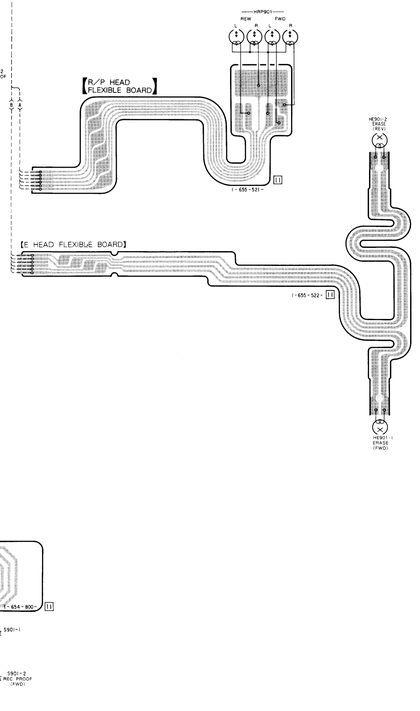
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	B-21	Q101	D-20	Q119	B-24
D701	F-22	Q102	D-20	Q120	C-23
D702	F-22	Q103	C-21	Q121	B-22
D703	E-25	Q104	C-17	Q122	B-22
D801	I-14	Q105	C-17	Q123	D-22
		Q106	F-16	Q124	E-23
IC101	D-21	Q107	F-16	Q601	K-22
IC102	D-23	Q108	G-17	Q602	K-19
IC103	B-24	Q109	F-20	Q603	K-22
IC601	J-20	Q110	F-16	Q604	K-21
IC602	J-22	Q111	G-17	Q605	K-22
IC603	J-22	Q112	H-16	Q606	K-21
IC701	H-22	Q113	H-17	Q607	K-21
IC702	F-22	Q114	E-21	Q702	G-22
IC703	F-21	Q115	E-21	Q703	F-21
IC801	I-13	Q116	D-22	Q704	F-20
		Q117	C-23	Q705	F-20
		Q118	C-22		



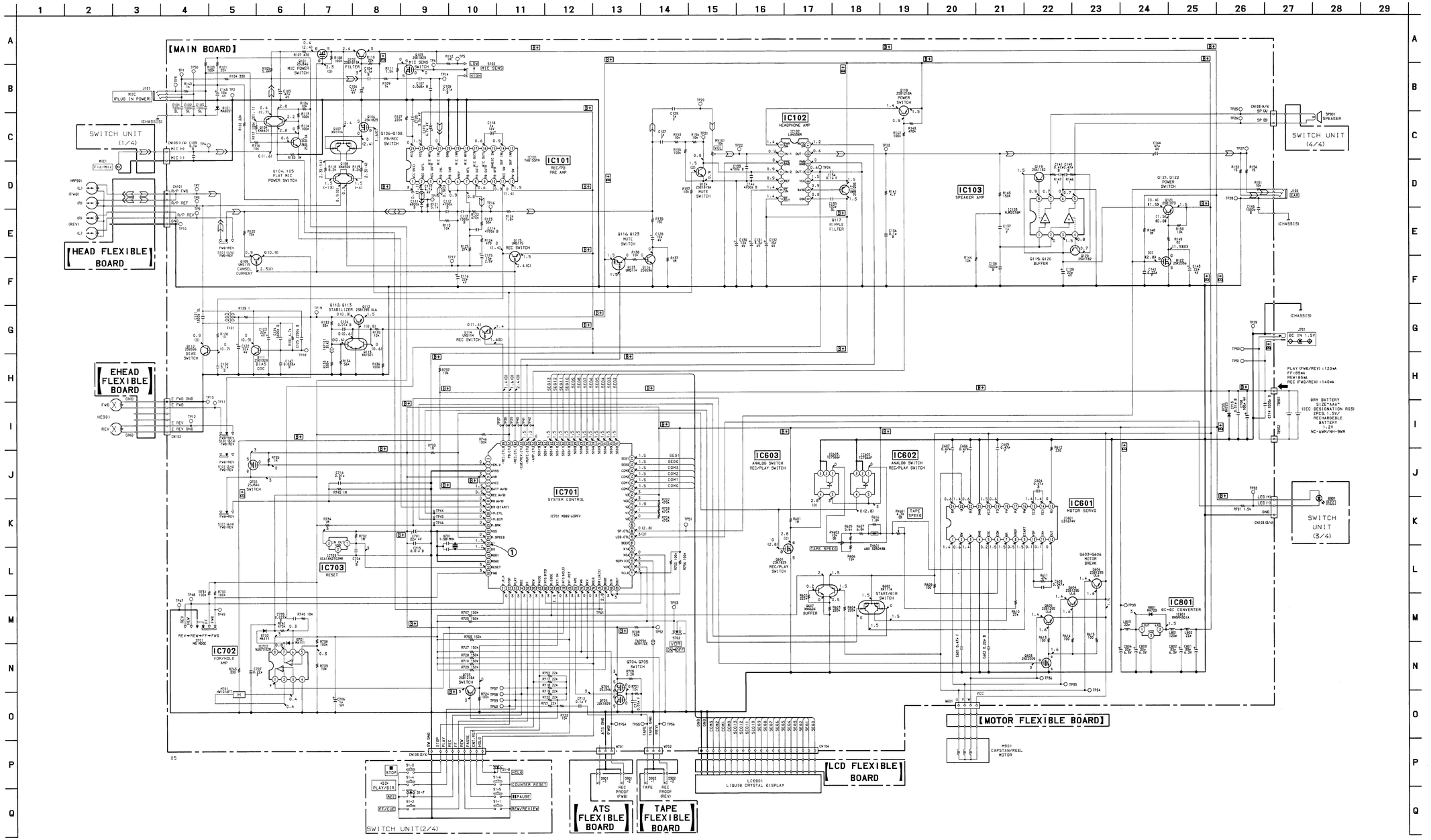

【MAIN BOARD】 (COMPONENT SIDE)
J102 EAR
J101 MIC (PLUG IN POWER)
RV101 (VOL)
REC/ERASE BATTERY 3.0V NC : 6mV, typ. : 9mV
S701 M/J MODE SWITCH FWD REV
S102 MIC SENS HIGH LOW
1-657-992-11


【MAIN BOARD】 (CONDUCTOR SIDE)
RV602 TAPE SPEED SLOW ◄► FAST
S702 VCR ON OFF
J701 DC IN 1.5V
DRY BATTERY SIZE "AAA" (IEC DESIGNATION R03) 3PCS./1.5V
LC590 LIQUID CRYSTAL DISPLAY
1-657-992-11



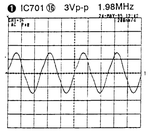


6-2. SCHEMATIC DIAGRAM • See page 10 for IC Block Diagrams.



• Waveform

❶ IC701 ⑯ 3Vp-p 1.98MHz



Note:

- All capacitors are in μF unless otherwise noted. pF: μpF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line.
- : panel designation.
- : adjustment for repair.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from the battery terminal.
- Voltage and waveform are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
  [ ] : EAR output
  < > : PB SP output
- Voltages are taken with a VOM (10 MΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveform is taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : PB
  : REC

6-3. IC PIN FUNCTION DESCRIPTION
MAIN BOARD IC701 MB89163PFV (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Function
1	—	—	Not used
2	$\overline{\text{EN. V}}$	O	"L": Power supply for surrounding circuit of microcomputer
3	AVss	—	A/D converter GND
4	AVR	—	A/D converter reference voltage
5	AVcc	—	A/D converter power supply
6	BATT (A/D)	I	Power voltage A/D input
7	REC (A/D)	I	Record signal A/D input
8	MD (A/D)	I	MD (FWD/REV) A/D input
9	RM (START)	I	Remote control mic A/D input
10	$\overline{\text{M. CTL}}$	O	Motor ON/OFF "L": ON
11	$\overline{\text{M. DIR}}$	O	Motor direction "L": REV "H": FWD
12	M. BRK	O	Motor brake "H": ON
13	Vss	—	GND
14	M. SPEED	O	Motor speed "L": Variable "H": Constant
15	X1	—	Crystal oscillator terminal for main clock
16	X0	—	Crystal oscillator terminal for main clock
17	MOD1	—	Operation mode appointment
18	MOD0	—	Operation mode appointment
19	RESET	I/O	"L": Reset On
20	FWD	I	"L": MD position (FWD)
21	F. R. R	I	"L": MD position (FF or REW or REV)
22	STOP	I	"L": STOP key input
23	PLAY	I	"L": PLAY key input
24	REC	I	"L": REC key input
25	FF	I	"L": FF key input
26	REW	I	"L": REW key input
27	PAUSE	I	"L": PAUSE key input
28	INT0 (RTS)	—	Not used
29	M. EDGE	I	Motor drive waveform (U phase) input
30	KEY. IN	I	"H": Set key input interrupt
31	INT3 (HALL)	I	Hall element signal input
32	CNT. RST	I	"L": Counter reset key input
33	TAPE	I	"H": TAPE detection
34	FWD	I	"L": FWD click detection
35	REV	I	"L": REV click detection
36	HOLD	I	"L": HOLD key input
37	RM (JACK)	I	"L": JACK dtection
38	MODE	—	Not used
39	SIN	—	Not used
40	SOUT	—	Not used

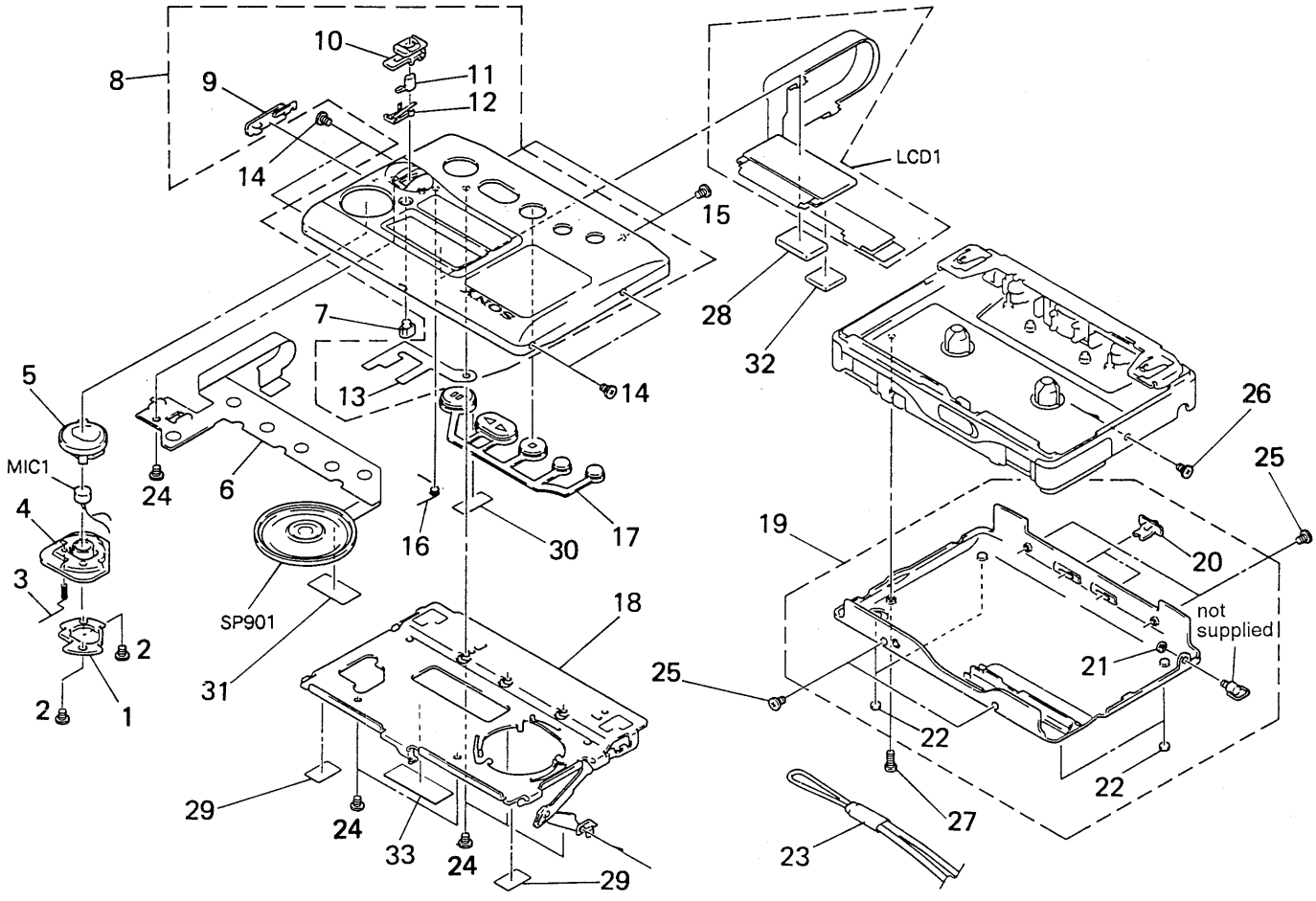
Pin No.	Pin Name	I/O	Function
41	SCLK	—	Not used
42	VOR	I	"L": VOR switch input
43	SERVICE	I	"L": Service mode input
44	X0A	—	Crystal oscillator terminal for low speed clock
45	X1A	—	Not used
46	BEEP	—	Not used
47	LED. CTL	O	"L": LED ON
48	SP. CTL	O	"H": Speaker amplifier ON
49	—	—	Not used
50	V0	—	Power supply for LCD drive
51	V1	—	Power supply for LCD drive
52	V2	—	Power supply for LCD drive
53	Vcc	—	Power supply
54	V3	—	Power supply for LCD drive
55 – 58	COM0 – 3	O	LCD drive output (common)
59 – 72	SEG0 – 13	O	LCD drive output (segment)
73	—	—	Not used
74	—	—	Not used
75	$\overline{\text{AMP. CTL}}$	O	"L": IC302 power ON
76	$\overline{\text{MUTE. CTL}}$	O	"L": IC302 mute ON
77	$\overline{\text{CUE/REV. CTL}}$	O	"L": IC302 amplifier gain attenuate ON
78	$\overline{\text{REC. CTL1}}$	O	"L": IC301 REC mode
79	PB. CTL	O	"H": PB mode
80	$\overline{\text{REC. CTL2}}$	O	"L": REC bias ON

SECTION 7
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

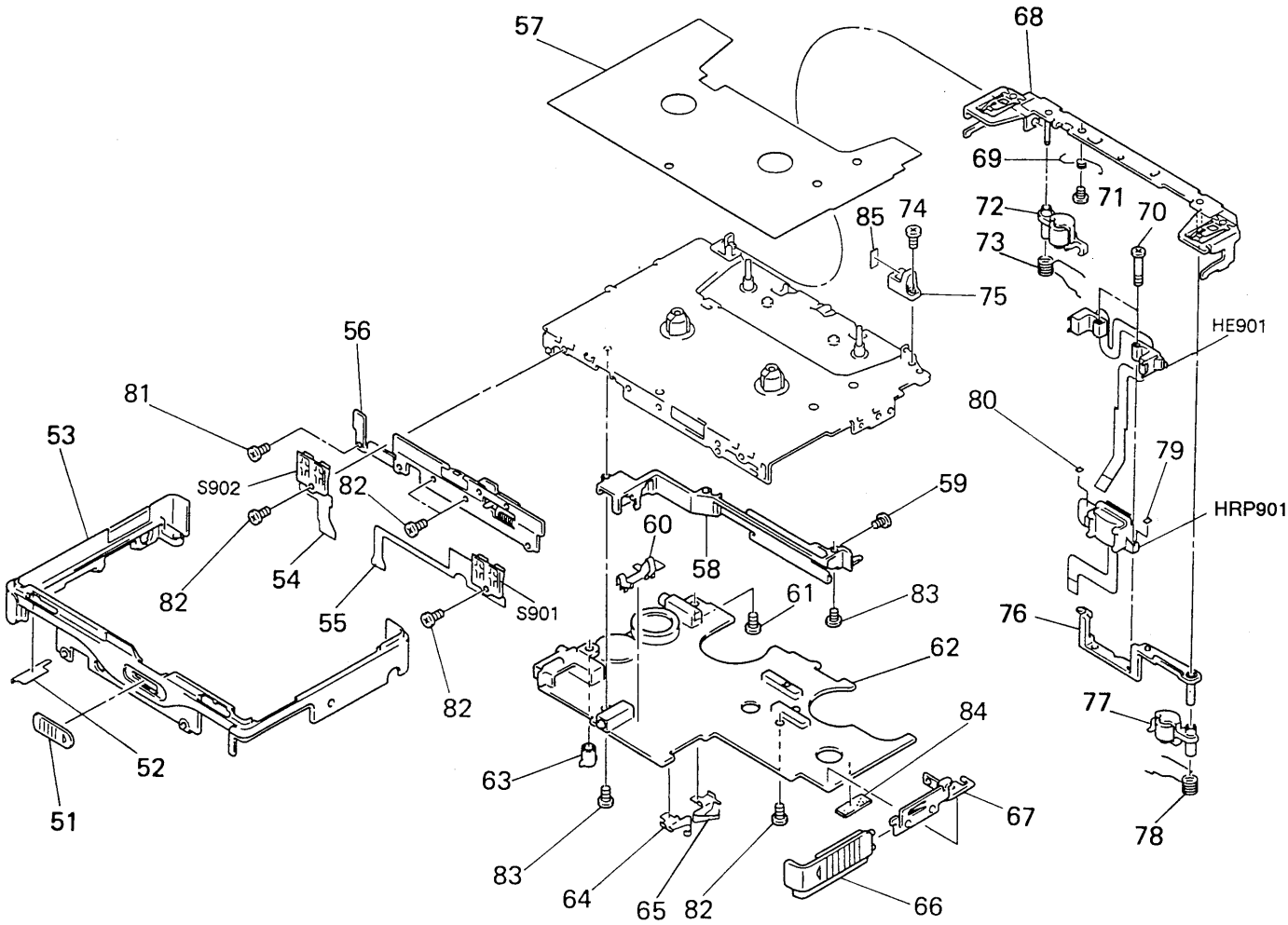
(1) CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	3-919-651-01	CABINET (MICROPHONE)	
2	3-309-597-01	SCREW (1.4), TAPPING	
3	3-919-650-01	SPRING (GROUND)	
4	3-919-649-01	CUSHION (MICROPHONE)	
5	X-3369-504-1	CABINET (MICROPHONE UPPER) ASSY	
6	1-467-853-11	SWITCH UNIT (■, ◁▷, REC, FF/CUE, HOLD, COUNTER RESET, ❚❚, REW/REVIEW)	
7	3-919-645-01	BUTTON (COUNTER)	
8	X-3370-650-1	LID ASSY, PANEL	
9	3-919-640-01	KNOB (HOLD)	
10	3-919-641-01	KNOB (REC)	
11	3-919-642-01	BUTTON (REC)	
12	3-919-643-01	SPRING (REC), LEAF	
* 13	3-922-307-01	SHEET (REC), CONDUCTIVE	
14	3-389-523-15	SCREW (LOCK ACE)	
15	3-365-630-21	SCREW (M1.4)	
16	3-919-644-01	SPRING, TORSION	
17	3-919-646-01	BUTTON (P.S)	
18	X-3369-503-1	HOLDER (LID) ASSY, CASSETTE	

Ref. No.	Part No.	Description	Remark
19	X-3370-652-1	PANEL (BOTTOM) ASSY	
20	3-919-631-01	KNOB (VOR)	
21	7-624-102-04	STOP RING 1.5, TYPE -E	
22	3-331-603-01	FOOT	
23	3-349-265-01	STRAP, HAND	
24	3-318-382-91	SCREW (1.7X2.5), TAPPING	
25	3-389-523-22	SCREW (LOCK ACE)	
26	3-389-523-23	SCREW (LOCK ACE)	
27	3-389-523-35	SCREW (LOCK ACE)	
28	9-911-815-01	CUSHION	
29	3-485-343-11	CUSHION, CABINET UPPER 10X7X0.3	
30	3-831-441-XX	SPACER, KNOB	
31	4-017-441-01	CUSHION (B)	
32	9-911-839-XX	CUSHION (P)	
33	3-578-230-00	LABEL, CAUTION (Tourist)	
LCD1	1-810-670-11	DISPLAY PANEL, LIQUID CRYSTAL (INCLUDED FLEXIBLE BOARD)	
MIC1	1-542-142-11	MICROPHONE, BUILT-IN	
SP901	1-504-688-11	SPEAKER (3.6CM)	

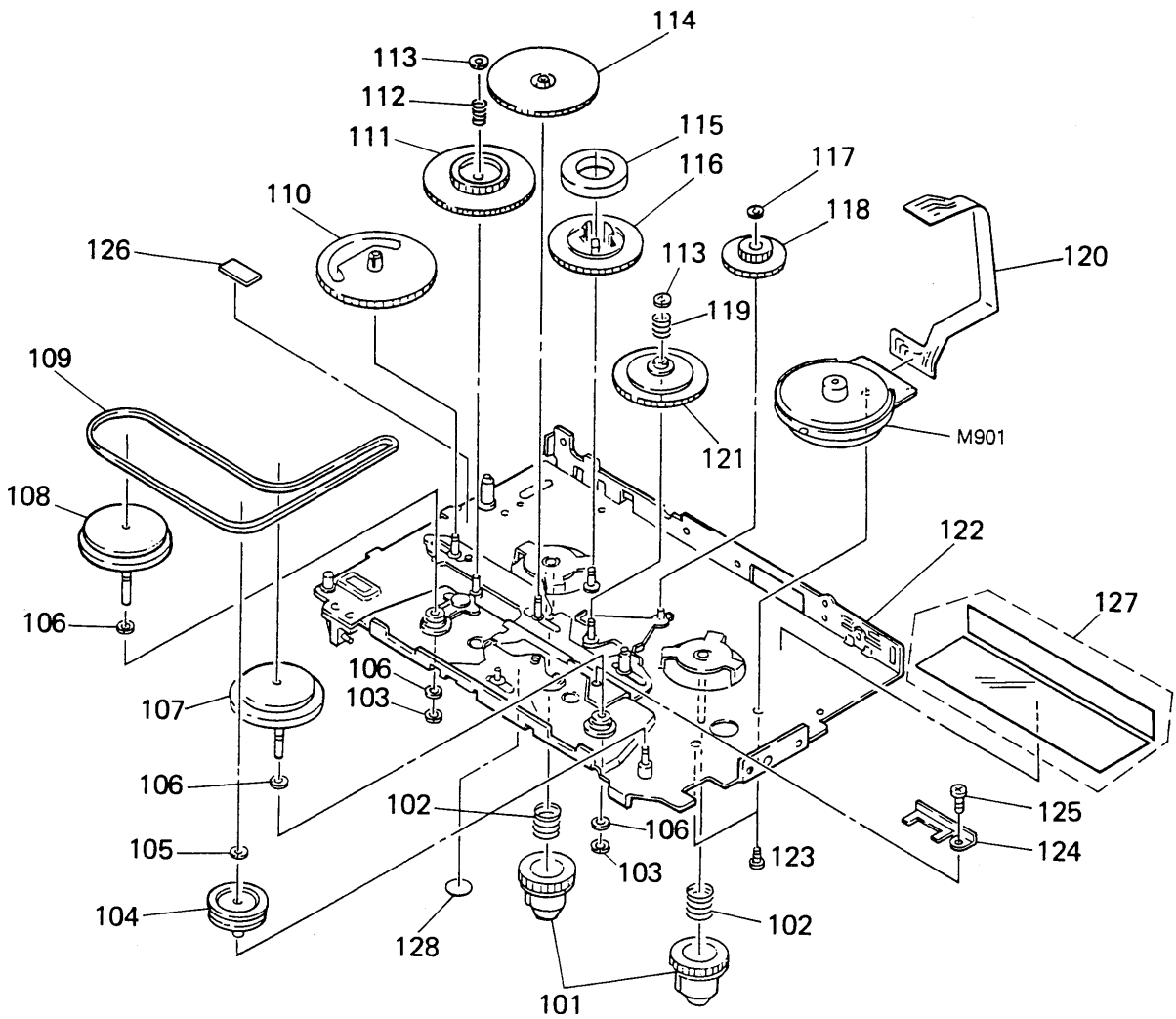
(2) BOARD, MECHANISM SECTION - 1



Ref. No.	Part No.	Description	Remark
51	3-387-905-21	KNOB (OPEN)	
52	3-921-194-01	PAPER (JACK), CONDUCTIVE	
53	3-919-620-21	ORNAMENT, REEL	
54	1-654-799-11	TAPE FLEXIBLE BOARD	
55	1-654-800-11	ATS FLEXIBLE BOARD	
56	X-3369-499-1	BRACKET ASSY	
57	3-926-552-01	COVER, MD (US)	
57	3-926-552-11	COVER, MD (EXCEPT US)	
58	3-919-626-01	HOLDER, BATTERY	
59	3-389-523-23	SCREW (LOCK ACE)	
60	3-919-623-01	TERMINAL BOARD	
61	3-345-648-03	SCREW (M1.4X4.0), TOOTHED LOCK	
* 62	A-3016-727-A	MAIN BOARD, COMPLETE	
63	3-921-143-01	COLLAR (PC BOARD)	
64	3-919-621-01	TERMINAL BOARD	
65	3-919-622-01	TERMINAL BOARD	
66	3-919-634-01	LID, BATTERY CASE	
67	X-3369-500-1	TERMINAL BOARD ASSY, BATTERY	
68	X-3366-299-1	HOLDER ASSY	
69	3-386-683-01	SPRING (H)	

Ref. No.	Part No.	Description	Remark
70	3-389-448-01	SCREW (M1.4), STEP	
71	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
72	X-3366-298-1	PINCH LEVER (N) ASSY	
73	3-929-257-01	SPRING (PINCH N)	
74	3-704-197-21	SCREW (M1.4X2.5), LOCKING	
75	3-386-704-01	GUIDE (B), HOLDER	
* 76	3-386-646-01	LEVER, HEAD	
77	X-3366-296-1	PINCH LEVER (R) ASSY	
78	3-929-258-01	SPRING (PINCH R)	
79	3-907-859-01	SPACER (H)	
80	3-907-859-11	SPACER (H)	
81	3-389-523-15	SCREW (LOCK ACE)	
82	3-366-892-01	SCREW (M1.4X1.1)	
83	3-389-523-22	SCREW (LOCK ACE)	
84	4-017-441-01	CUSHION (B)	
85	9-911-863-XX	SPACER (Z)	
HE901	1-500-163-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-500-162-21	HEAD, MAGNETIC (RECORD/PLAYBACK)	
S901	1-762-080-11	SWITCH, LEAF (REC PROOF (FWD), ATS)	
S902	1-692-101-11	SWITCH, LEAF (REC PROOF (REV), TAPE)	

(3) MECHANISM SECTION - 2
(MT-80-60)



Ref. No.	Part No.	Description	Remark
101	3-386-634-03	GEAR (REEL)	
102	3-386-662-01	SPRING, COMPRESSION	
103	3-325-394-01	WASHER, STOPPER	
104	3-386-711-01	PULLEY (REVERSE)	
105	3-338-645-21	WASHER (0.8-2.5)	
106	3-922-934-01	WASHER	
107	X-3368-637-1	WHEEL (RS) ASSY, CAPSTAN	
108	X-3368-636-1	WHEEL (NS) ASSY, CAPSTAN	
109	3-388-079-02	BELT	
110	3-386-852-01	GEAR (CAM)	
111	3-386-631-01	GEAR (A)	
112	3-386-663-01	SPRING, COMPRESSION	
113	3-906-183-01	WASHER	
114	3-386-691-01	GEAR (B)	
115	3-386-706-01	MAGNET	

Ref. No.	Part No.	Description	Remark
116	3-386-633-01	GEAR (E)	
117	3-929-685-01	RING (GEAR D)	
118	3-386-632-01	GEAR (D)	
119	3-904-227-01	SPRING, COMPRESSION	
120	1-644-696-11	MOTOR FLEXIBLE BOARD	
121	X-3371-082-1	CLUTCH ASSY	
122	X-3369-506-1	CHASSIS ASSY	
123	3-906-045-01	SCREW	
* 124	3-906-049-01	LEVER (REC), SELECTION	
125	3-366-892-01	SCREW (M1.4X1.1)	
* 126	3-923-816-01	SHEET (CAM)	
127	3-919-656-01	SHEET (MD), INSULATING	
* 128	3-378-826-01	SHEET (AB)	
M901	1-698-084-11	MOTOR (CAPSTAN/REEL)	

MAIN

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3016-727-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C102	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C103	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C104	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C106	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C107	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C110	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C111	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C112	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C113	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C114	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C115	1-135-219-11	TANTAL. CHIP	15uF	20%	2.5V
C116	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C118	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C119	1-135-151-21	TANTALUM CHIP	4.7uF	20%	4V
C120	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C121	1-164-693-11	CERAMIC CHIP	0.0018uF	5%	50V
C122	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C123	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C124	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C125	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C126	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C127	1-164-346-11	CERAMIC CHIP	1uF		16V
C128	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C129	1-164-346-11	CERAMIC CHIP	1uF		16V
C130	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C131	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C132	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C133	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C134	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C135	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C136	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C137	1-164-346-11	CERAMIC CHIP	1uF		16V
C138	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C139	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C140	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C141	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C142	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C143	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C144	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C145	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C146	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C147	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C148	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C150	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C601	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C602	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C603	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C604	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C605	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C606	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C607	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C701	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C704	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C705	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C706	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C707	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C708	1-104-848-11	TANTAL. CHIP	100uF	20%	4V
C711	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C712	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C713	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C714	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C715	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C716	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C801	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C802	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C803	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C804	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
		< CONNECTOR >			
CN101	1-766-819-11	CONNECTOR, FPC (ZIF) 6P			

Ref. No.	Part No.	Description	Remark
CN102	1-766-819-11	CONNECTOR, FPC (ZIF) 6P	
CN103	1-766-750-11	CONNECTOR, FPC (ZIF) 18P	
CN104	1-766-820-21	CONNECTOR, FPC (ZIF) 20P	
		< DIODE >	
D101	8-719-422-91	DIODE MA8091	
D701	8-719-404-49	DIODE MA111	
D702	8-719-404-49	DIODE MA111	
D703	8-719-420-51	DIODE MA729	
D801	8-719-420-51	DIODE MA729	
		< HALE ELEMENT >	
H701	8-759-052-95	IC HW-101AFT-DEF	
		< IC >	
IC101	8-759-062-63	IC TA8155FN	
IC102	8-759-805-02	IC LA4538M	
IC103	8-759-289-74	IC NJM2076M(TE2)	
IC601	8-759-275-47	IC LB1674V-TLM	
IC602	8-759-062-66	IC TC7S66F	
IC603	8-759-062-66	IC TC7S66F	
IC701	8-759-360-37	IC MB89163PFV-141	
IC702	8-759-289-77	IC NJU7002M(TE2)	
IC703	8-759-289-76	IC XC61AN2702MR	
IC801	8-759-253-51	IC RH5RH301A	
		< JACK >	
J101	1-573-014-31	JACK (MIC)	
J102	1-774-131-11	JACK (EAR)	
J701	1-750-061-11	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 1.5V)
		< COIL >	
L801	1-414-222-11	INDUCTOR 120uH	
L802	1-412-235-11	INDUCTOR CHIP 22uH	
L803	1-412-235-11	INDUCTOR CHIP 22uH	
		< TRANSISTOR >	
Q101	8-729-026-30	TRANSISTOR 2SJ346-TE85L	
Q102	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q103	8-729-028-26	TRANSISTOR 2SK1829(TE85L)	
Q104	8-729-403-27	TRANSISTOR XN4401	
Q105	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q106	8-729-028-26	TRANSISTOR 2SK1829(TE85L)	
Q107	8-729-422-41	TRANSISTOR XN1114	
Q108	8-729-425-18	TRANSISTOR XN4504	
Q109	8-729-420-53	TRANSISTOR UN5115	
Q110	8-729-141-75	TRANSISTOR 2SD596DV345	
Q111	8-729-400-56	TRANSISTOR 2SD1328-T	
Q112	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q113	8-729-402-13	TRANSISTOR XN1501	
Q114	8-729-402-96	TRANSISTOR UN5114	
Q115	8-729-420-53	TRANSISTOR UN5115	
Q116	8-729-141-75	TRANSISTOR 2SD596DV345	
Q117	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q118	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q119	8-729-030-31	TRANSISTOR 2SA1182-O(TE85L)	
Q120	8-729-030-31	TRANSISTOR 2SA1182-O(TE85L)	
Q121	8-729-422-87	TRANSISTOR 2SB1073-R	
Q122	8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
Q123	8-729-402-96	TRANSISTOR UN5114	
Q124	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q601	8-729-028-26	TRANSISTOR 2SK1829(TE85L)	
Q602	8-729-422-41	TRANSISTOR XN1114	
Q603	8-729-028-27	TRANSISTOR 2SK2009(TE85L)	
Q604	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q605	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q606	8-729-807-87	TRANSISTOR 2SB1295-UL6	
Q607	8-729-425-24	TRANSISTOR XN4604	
Q702	8-729-026-30	TRANSISTOR 2SJ346-TE85L	
Q703	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q704	8-729-026-30	TRANSISTOR 2SJ346-TE85L	
Q705	8-729-028-26	TRANSISTOR 2SK1829(TE85L)	
		< RESISTOR >	
R101	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R102	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R103	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R104	1-216-815-11	METAL CHIP 330 5% 1/16W	
R105	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R106	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R107	1-216-817-11	METAL CHIP 470 5% 1/16W	
R108	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R109	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R110	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R111	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R112	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R113	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R114	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R115	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R116	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R117	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R118	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R119	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
R120	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R121	1-218-272-11	METAL GLAZE 5.1K 5% 1/16W	
R122	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R123	1-216-839-11	METAL CHIP 33K 5% 1/16W	

MAIN

Ref. No.	Part No.	Description			Remark
R124	1-216-817-11	METAL CHIP	470	5%	1/16W
R125	1-216-838-11	METAL CHIP	27K	5%	1/16W
R126	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R127	1-216-849-11	METAL CHIP	220K	5%	1/16W
R128	1-216-821-11	METAL CHIP	1K	5%	1/16W
R129	1-218-446-11	METAL CHIP	1	5%	1/16W
R130	1-216-857-11	METAL CHIP	1M	5%	1/16W
R131	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R132	1-216-839-11	METAL CHIP	33K	5%	1/16W
R133	1-216-851-11	METAL CHIP	330K	5%	1/16W
R134	1-216-842-11	METAL CHIP	56K	5%	1/16W
R135	1-216-833-11	METAL CHIP	10K	5%	1/16W
R136	1-216-845-11	METAL CHIP	100K	5%	1/16W
R137	1-216-857-11	METAL CHIP	1M	5%	1/16W
R138	1-216-833-11	METAL CHIP	10K	5%	1/16W
R139	1-216-811-11	METAL CHIP	150	5%	1/16W
R140	1-216-821-11	METAL CHIP	1K	5%	1/16W
R141	1-216-793-11	METAL GLAZE	4.7	5%	1/16W
R142	1-216-845-11	METAL CHIP	100K	5%	1/16W
R143	1-216-853-11	METAL CHIP	470K	5%	1/16W
R144	1-216-833-11	METAL CHIP	10K	5%	1/16W
R145	1-216-847-11	METAL CHIP	150K	5%	1/16W
R146	1-218-446-11	METAL CHIP	1	5%	1/16W
R147	1-218-446-11	METAL CHIP	1	5%	1/16W
R148	1-216-857-11	METAL CHIP	1M	5%	1/16W
R149	1-216-808-11	METAL CHIP	82	5%	1/16W
R150	1-216-833-11	METAL CHIP	10K	5%	1/16W
R151	1-216-833-11	METAL CHIP	10K	5%	1/16W
R152	1-216-154-00	METAL GLAZE	15	5%	1/8W
R153	1-216-833-11	METAL CHIP	10K	5%	1/16W
R154	1-216-833-11	METAL CHIP	10K	5%	1/16W
R155	1-216-845-11	METAL CHIP	100K	5%	1/16W
R156	1-216-154-00	METAL GLAZE	15	5%	1/8W
R157	1-216-833-11	METAL CHIP	10K	5%	1/16W
R601	1-216-857-11	METAL CHIP	1M	5%	1/16W
R602	1-216-849-11	METAL CHIP	220K	5%	1/16W
R603	1-216-849-11	METAL CHIP	220K	5%	1/16W
R604	1-216-849-11	METAL CHIP	220K	5%	1/16W
R605	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R606	1-216-835-11	METAL CHIP	15K	5%	1/16W
R607	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R609	1-216-809-11	METAL CHIP	100	5%	1/16W
R610	1-216-838-11	METAL CHIP	27K	5%	1/16W
R611	1-216-841-11	METAL CHIP	47K	5%	1/16W
R612	1-216-813-11	METAL CHIP	220	5%	1/16W
R613	1-216-809-11	METAL CHIP	100	5%	1/16W
R614	1-216-809-11	METAL CHIP	100	5%	1/16W
R615	1-216-809-11	METAL CHIP	100	5%	1/16W
R616	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R701	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R702	1-216-853-11	METAL CHIP	470K	5%	1/16W
R703	1-216-853-11	METAL CHIP	470K	5%	1/16W
R704	1-216-853-11	METAL CHIP	470K	5%	1/16W
R707	1-216-847-11	METAL CHIP	150K	5%	1/16W
R708	1-216-847-11	METAL CHIP	150K	5%	1/16W
R709	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R710	1-216-847-11	METAL CHIP	150K	5%	1/16W
R717	1-216-837-11	METAL CHIP	22K	5%	1/16W
R718	1-216-837-11	METAL CHIP	22K	5%	1/16W
R719	1-216-837-11	METAL CHIP	22K	5%	1/16W
R720	1-216-837-11	METAL CHIP	22K	5%	1/16W
R721	1-216-837-11	METAL CHIP	22K	5%	1/16W
R722	1-216-833-11	METAL CHIP	10K	5%	1/16W
R724	1-216-845-11	METAL CHIP	100K	5%	1/16W
R725	1-216-847-11	METAL CHIP	150K	5%	1/16W
R727	1-216-847-11	METAL CHIP	150K	5%	1/16W
R728	1-216-847-11	METAL CHIP	150K	5%	1/16W
R729	1-216-847-11	METAL CHIP	150K	5%	1/16W
R730	1-216-845-11	METAL CHIP	100K	5%	1/16W
R731	1-216-845-11	METAL CHIP	100K	5%	1/16W
R732	1-216-857-11	METAL CHIP	1M	5%	1/16W
R733	1-216-857-11	METAL CHIP	1M	5%	1/16W
R734	1-216-857-11	METAL CHIP	1M	5%	1/16W
R735	1-216-857-11	METAL CHIP	1M	5%	1/16W
R737	1-216-833-11	METAL CHIP	10K	5%	1/16W
R738	1-216-845-11	METAL CHIP	100K	5%	1/16W
R739	1-216-833-11	METAL CHIP	10K	5%	1/16W
R740	1-216-833-11	METAL CHIP	10K	5%	1/16W
R741	1-216-853-11	METAL CHIP	470K	5%	1/16W
R743	1-216-815-11	METAL CHIP	330	5%	1/16W
R745	1-216-857-11	METAL CHIP	1M	5%	1/16W
R746	1-216-845-11	METAL CHIP	100K	5%	1/16W
R751	1-216-833-11	METAL CHIP	10K	5%	1/16W
R752	1-216-837-11	METAL CHIP	22K	5%	1/16W
R753	1-216-847-11	METAL CHIP	150K	5%	1/16W
R754	1-216-845-11	METAL CHIP	100K	5%	1/16W
R755	1-216-845-11	METAL CHIP	100K	5%	1/16W

< VARIABLE RESISTOR >

RV101	1-223-749-11	RES, VAR, CARBON 10K/10K (VOL)
RV601	1-238-663-11	RES, ADJ, CARBON 4.7K
RV602	1-223-948-11	RES, VAR, CARBON (TAPE SPEED)

< SWITCH >

S101	1-692-589-11	SWITCH, SLIDE (FWD-REV)
S102	1-571-275-31	SWITCH, SLIDE (MIC SENS)
S701	1-692-370-11	SWITCH, SLIDE (MD MODE)

Ref. No.	Part No.	Description	Remark
S702	1-571-275-31	SWITCH, SLIDE (VOR)	
		< TRANSFORMER >	
T101	1-427-653-21	TRANSFORMER, BIAS OSCILLATION	
		< THERMISTOR >	
TH601	1-809-351-11	THERMISTOR, NTC (2125)	
		< VIBRATOR >	
X701	1-579-867-21	VIBRATOR, CERAMIC (1.981MHz)	

****

MISCELLANEOUS
****

6	1-467-853-11	SWITCH UNIT (■, ◁▷, REC, FF/CUE, HOLD, COUNTER RESET, ❚❚, REW/REVIEW)	
54	1-654-799-11	TAPE FLEXIBLE BOARD	
55	1-654-800-11	ATS FLEXIBLE BOARD	
120	1-644-696-11	MOTOR FLEXIBLE BOARD	
HE901	1-500-163-11	HEAD, MAGNETIC (ERASE)	
HRP901	1-500-162-21	HEAD, MAGNETIC (RECORD/PLAYBACK)	
LCD1	1-810-670-11	DISPLAY PANEL, LIQUID CRYSTAL (INCLUDED FLEXIBLE BOARD)	
M901	1-698-084-11	MOTOR (CAPSTAN/REEL)	
MIC1	1-542-142-11	MICROPHONE, BUILT-IN	
S901	1-762-080-11	SWITCH, LEAF (REC PROOF (FWD), ATS)	
S902	1-692-101-11	SWITCH, LEAF (REC PROOF (REV), TAPE)	
SP901	1-504-688-11	SPEAKER (3.6CM)	

****

ACCESSORIES & PACKING MATERIALS
****

	1-528-078-00	BATTERY, ALKALINE MANGANESE (Tourist)	
	1-542-268-11	MICROPHONE, ELECTRET CONDENSER (Tourist)	
	3-800-189-01	MANUAL, INSTRUCTION (JAPANESE) (Tourist)	
	3-800-189-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH)	
	3-800-189-21	MANUAL, INSTRUCTION (SPANISH, PORTUGUESE)	(AEP, UK, E)
	3-800-189-31	MANUAL, INSTRUCTION (GERMAN, DUTCH)	(AEP, UK)
	3-800-189-41	MANUAL, INSTRUCTION (SWEDISH, ITALIAN)	(AEP, UK)
	3-800-189-51	MANUAL, INSTRUCTION (KOREAN) (E)	
	3-919-617-01	CASE, CARRYING	
*	3-927-756-01	CUSHION	
*	3-927-757-01	INDIVIDUAL CARTON (EXCEPT US)	
*	3-927-764-01	INDIVIDUAL CARTON (US)	
	8-953-538-90	HEADPHONE MDR-E741//K SET (Tourist)	
	X-3329-657-1	ATTACHMENT ASSY (Tourist)	

English
95G0594-1
Printed in Japan
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Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

9-960-277-11

Published by Home A&V Products Div.
Quality Engineering Dept.

TCM-80V

SONY

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Tourist Model

SUPPLEMENT-1

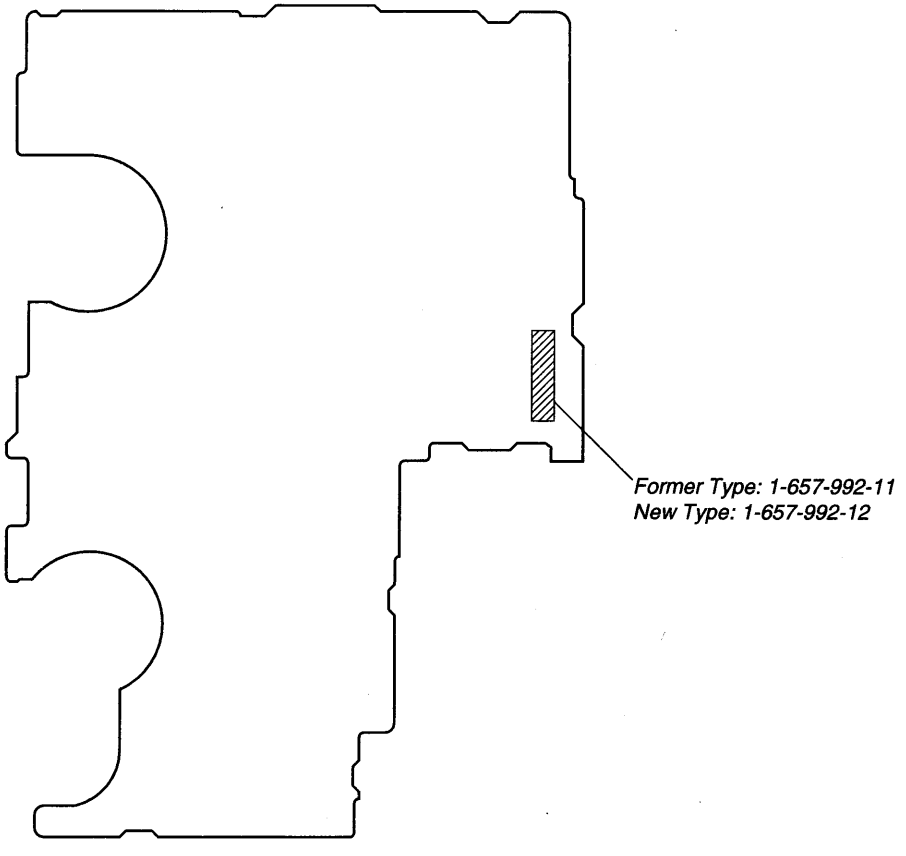
File this supplement with the service manual.

Subject: MAIN Board Modification

(ECN-MT700293)

• **New/Former Discrimination**

[MAIN BOARD] (CONDUCTOR SIDE)



9-960-277-81

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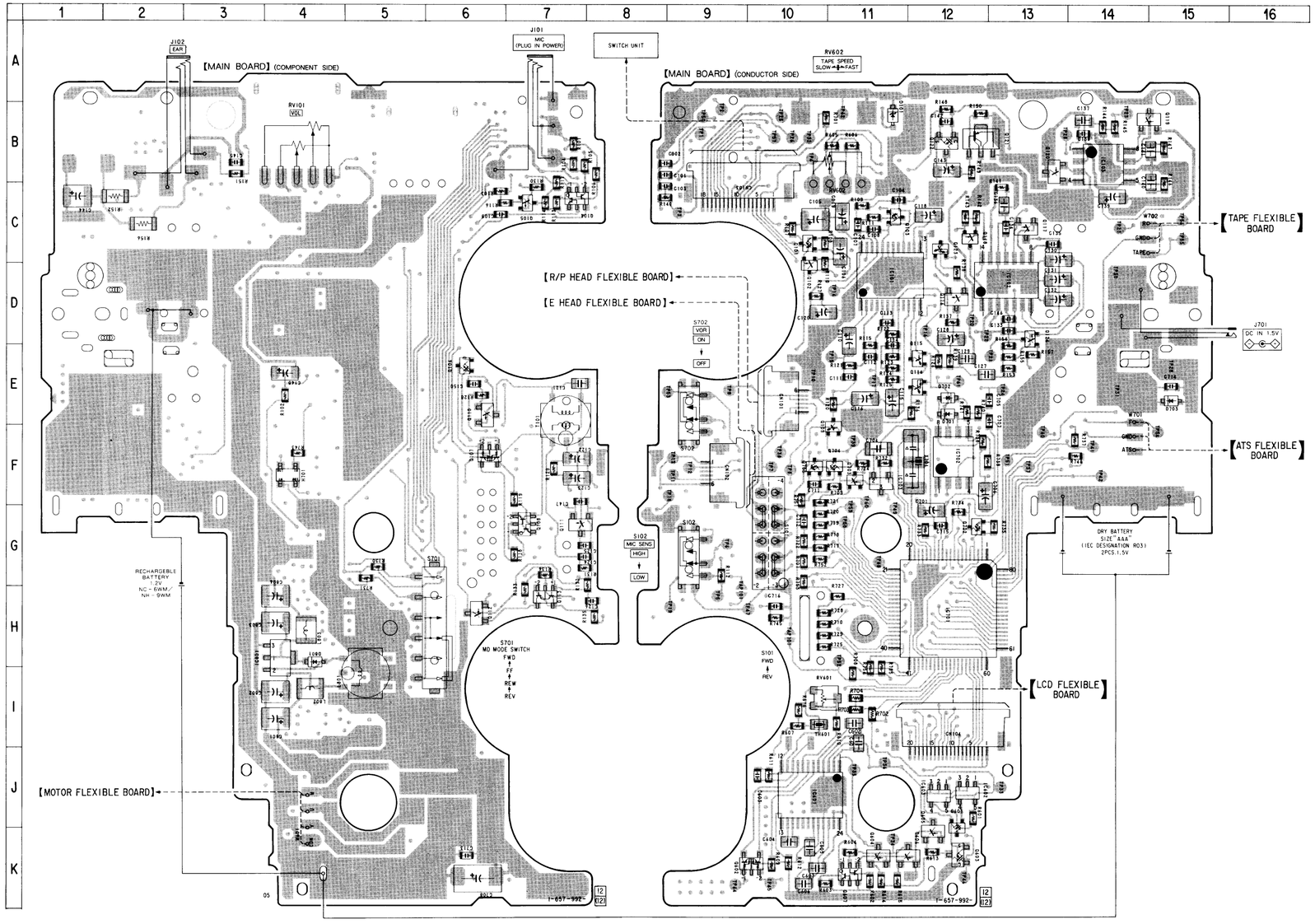
Personal A&V Products Company

97H0594-1
Printed in Japan © 1997. 8
Published by Quality Engineering Dept.
(Shibaura)

Page	Former type					New type				
	Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark
27	CN103	1-766-750-11	CONNECTOR, FPC (ZIF) 18P			CN103	1-573-927-11	CONNECTOR, FFC/FPC (ZIF) 18P		
	CN104	1-766-820-11	CONNECTOR, FPC (ZIF) 20P			CN104	1-573-929-11	CONNECTOR, FFC/FPC (ZIF) 20P		
28	R606	1-216-835-11	METAL CHIP 15K	5%	1/16W	R606	1-216-837-11	METAL CHIP 22K	5%	1/16W
	R607	1-216-831-11	MEATL CHIP 6.8K	5%	1/16W	R607	1-216-829-11	MEATL CHIP 4.7K	5%	1/16W
	R610	1-216-838-11	METAL CHIP 27K	5%	1/16W	R610	1-216-836-11	METAL CHIP 18K	5%	1/16W
	RV601	1-238-663-11	RES, ADJ, CARBON 4.7K			RV601	1-223-586-11	RES, ADJ, CARBON 10K		

- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.

1. DIAGRAM
1-1. PRINTED WIRING BOARD


【MAIN BOARD】 (COMPONENT SIDE)
【MAIN BOARD】 (CONDUCTOR SIDE)
J102 EAR
J101 MIC (PLUG IN POWER)
SWITCH UNIT
RV602 TAPE SPEED SLOW ↔ FAST
RV101 VOL
【TAPE FLEXIBLE BOARD】
【R/P HEAD FLEXIBLE BOARD】
【E HEAD FLEXIBLE BOARD】
J701 DC IN 1.5V
S702 VOR ON OFF
S102 MIC SENS HIGH LOW
【ATS FLEXIBLE BOARD】
DRY BATTERY SIZE "AAA" (IEC DESIGNATION R03) 2PCS.1.5V
RECHARGEBLE BATTERY 2V NC - 6WM NH - 9WM
S701 MD MODE SWITCH FWD FF REW REV
S101 FWD REV
【LCD FLEXIBLE BOARD】
【MOTOR FLEXIBLE BOARD】
1-657-992-12 (12)

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	B-11	Q101	C-10	Q119	B-15
D701	E-12	Q102	D-10	Q120	B-13
D702	E-12	Q103	C-11	Q121	B-12
D703	E-15	Q104	C-7	Q122	B-12
D801	H-4	Q105	C-7	Q123	C-12
		Q106	E-6	Q124	D-13
IC101	D-11	Q107	F-6	Q601	K-12
IC102	D-13	Q108	G-7	Q602	K-10
IC103	B-14	Q109	F-11	Q603	K-12
IC601	J-10	Q110	E-6	Q604	K-11
IC602	J-12	Q111	G-7	Q605	K-12
IC603	J-12	Q112	H-6	Q606	K-12
IC701	H-12	Q113	H-7	Q607	K-11
IC702	F-12	Q114	E-12	Q702	G-12
IC703	F-11	Q115	E-12	Q703	F-11
IC801	H-4	Q116	D-12	Q704	F-11
		Q117	C-13	Q705	F-10
		Q118	C-12		

Note on Printed Wiring Board:
- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.